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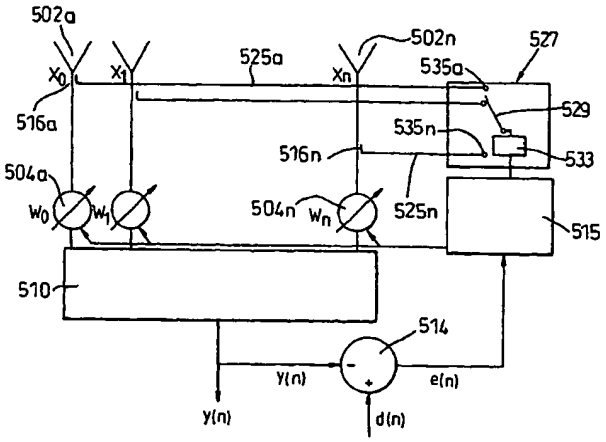
(54) Title: SIGNAL PROCESSING SYSTEM AND METHOD



(57) Abstract: A phased array antenna that employs a switched least means squared architecture comprises plurality of receiving elements (502a-n) each having a respective weighting unit (504a-n) associated therewith, a summation unit (510), a processor (515), a plurality of sampling devices (516a-n) and a switching unit (527). The switching unit (527) contains a switch arm (529) having a contact at its free and, an ADC (533) and a plurality of switch contacts (535a-n) corresponding to the ends of channels (525a-n) connected to the respective sampling devices (516a-n). Each of a plurality of receiving elements (502a-n) is ampled by a respective sampling device (516a-n) prior to an incoming signal subjected to complex weighting by respective weighting units (504a-n). Each of the signals sampled by the sampling device (516a-n) passes along respective channels (525a-n) to the switching unit (527). Thus, by switching between the contacts (535a-n) it is possible to vary which of the receiving elements is sampled. The processor (515) calculates new complex weighting coefficients to be applied to the incoming signals by the weighting units (504a-n) using the sampled incoming signals in order to minimise a difference between an output from the summation unit y (n) and a training signal d (n).

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